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Health promotion in medical education: lessons from a major curriculum implementation

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Abstract

Despite the economic, environmental and patient-related imperatives to prepare medical students to become health promoting doctors, health promotion remains relatively devalued and deprioritised in medical curricula compared to more pathology-based specialty learning. This paper uses an in-depth case study of a health promotion curriculum implementation at a large UK medical school to provide insights into the experiences of teachers and learners across a range of topics, pedagogies, and teaching & assessment modalities. Topics included smoking cessation, behavioural change approaches to obesity, exercise prescribing, social prescribing, maternal and child health, public and global health; with pedagogies ranging from e-learning to practice-based project work. Qualitative methods including focus groups, analysis of reflective learning submissions, and evaluation data are used to illuminate motivations and frustrations, as well as practicalities, successes and limiting factors. Over this three year implementation, a range of challenges have been highlighted including: how to adequately prepare and support clinical teachers; the need to establish relevance and importance to strategic learners; the need for experiential learning in clinical environments to support classroom-based activities; and the need to rebalance competing aspects of the curriculum. Conclusions are drawn about heterogeneous deep learning over standardised surface learning, and the impacts, both positive and negative, of different assessment modalities on these types of learning.

Abstract 210 words.

Main article 3000 words.

Keywords: health promotion, curriculum development, social determinants of health, primary care, medical education, non-communicable diseases.

Status box

What is already known in this area:

The need to incorporate concepts of health promotion into medical curricula remains high on the General Medical Council's (GMC) agenda with each edition of Tomorrow's Doctors being more explicit in this requirement, influencing not only UK medical schools but medical curricula internationally (1). A number of publications explore, assess and develop approaches to content, learning objectives and outcomes (2-5), however the subject remains a challenge to incorporate successfully, and the underlying reasons poorly understood.

What this work adds:

By illuminating the motivations, experiences and frustrations of students and educators in a spiral health promotion curriculum as it matures over three years, we aim to support medical educators in building more effective, sustainable and acceptable solutions.

Suggestions for future research:

A study that looks specifically at the impacts of assessment modality on student engagement in health promotion learning. Assessments that are evidenced to support social sciences in medical education are needed, as well educational strategies to address strategic learning.

Introduction

This research is an evaluative case study aiming to construct purposeful knowledge for both HP educators and curriculum developers (6). It describes a mature curriculum implementation, outlined in table 1, based at a large UK medical school (>400 students/year) that has undergone three years of iterative improvements through ‘action research’ (7) as well as pragmatic or opportunistic reactions to the learning context.

The rationale for this curriculum implementation (figure 1) included the significant rise in preventable non-communicable diseases, driven by modifiable behavioural and social determinants of health; and the unsustainable costs to society if these issues are not addressed (8). There is also a maturing understanding of behaviour change theory, with clearer guidelines for best practice (9).

Despite many examples where the role of the health promoting clinician can be paramount (10-12), the subject remains difficult to implement effectively (5), leaving HP at risk of being devalued and deprioritised by educators and students. The underlying reasons for these challenges are complex, and deserve study.

Design & methods

Methods associated with interpretive research, particularly illuminative evaluation (13), are used to build a picture of the experiences of learners, the impacts of the learning context including assessment modalities, and to provide insights into intended, unintended and serendipitous learning.

Data sources include evaluation data, focus groups, assessment submissions and feedback, looking at the experiences of both students and educators. All students were invited to participate in focus groups, incentivised by a book token, with ‘first come first served’ selection. 15 focus groups each containing between 2 and 8 students were moderated by experienced researchers who were not in a position of authority over the

students, with topic guides and agreed strategies for exploring issues and managing group dynamics. Data were analysed with the assistance of NVivo 10 software, grouping content and emergent themes according to course elements and rotation/year; an overarching analysis was achieved through discussion between researchers and where possible checked back with participants. At least two focus groups were completed for all course elements with sufficient similarity between groups for saturation on major themes to be implied, supported by evaluation data. All course feedback was analysed, as well as a random selection of assignments from each cohort. See figure 2 for data collection and analysis strategies.

Results & analysis

The results below refer to the course elements described in table 1.

3rd year activities

Activities included a behaviour change lecture and workshops where students were introduced to practical applications of theory including motivational interviewing, goal setting and action planning, patient-led problem solving, social prescribing, follow-up and self-monitoring. All students were encouraged to complete an online smoking cessation course (14) and participated in practice-based and simulated GP surgeries where the focus was on patient-centred approaches to consultations.

Smoking cessation

Despite the smoking cessation course remaining optional, completion rates increased from 28% in 2012 to 62% in 2015. Students completing the course cited a mixture of internal and external motivations *‘I did it for a few reasons... one for the CV/brownie point type thing; the other... I’m interested in changing people’s behaviour’* and found

it acceptable as it complemented other learning and clinical encounters, and felt congruent with their conception of ‘the good doctor’, *‘you’re not a good medical student, you’re not a good doctor, if you don’t have something in your armoury to help people who want to stop’*. Competing course pressures and difficulty accessing the online site were cited as reasons for non-completion, rather than rejection of smoking cessation as a skill per se *‘we got the emails and people were a bit confused... so people just gave up’*. This sign-up with successful completion of the course will become compulsory from now onwards.

Students argued that ‘skills atrophy’ would set in if they could not actively apply techniques *‘I also think that we’re much more likely to remember things from the course if we practise them soon after we learnt them’*. Others argued that as third year students they did not feel senior enough to offer smoking cessation advice to patients in clinical contexts *‘so you don’t really... feel so comfortable coming up to somebody especially at our age... you don’t really have the authority’*, though this was less evident with final year students *‘...so I was like ‘have you thought about quitting smoking and risks’... then it felt appropriate to think as a [junior doctor]’*. To address this, students suggested practical initiatives *‘[it] would be a fantastic idea for people to do and to go out and develop in schools and educate people’*. In subsequent cohorts students had structured opportunities to participate in smoking cessation projects within the main teaching hospitals, including support for CQUIN¹ targets. Students reported their confidence in discussing smoking status and cessation improved following practical experience *‘when I saw a patient was smoking I felt a lot more confident saying ‘have you thought about smoking cessation?’*

¹ NHS Commissioning for Quality and Innovation

4th year activities

Students completed a longitudinal pregnancy study visiting a mother at home during her pregnancy and after the birth of her child, and were asked to review and present an analysis of a local or practice-based HP intervention.

Longitudinal community pregnancy study

The longitudinal pregnancy study, with associated small group tutorials and assessed presentation, required students to consider how health behaviours can be addressed in pregnancy and what specific social determinants of health or barriers to healthcare their allocated patient had. The teaching was valued for its focus on the determinants of health, in contrast to more pathology-focused teaching: *‘Following a pregnant lady in antenatal and postnatal periods was invaluable for insight into biopsychosocial aspects of pregnancy’*. The longitudinal element was appreciated as well as the insights gained from seeing their patient at home and in community settings *‘I valued the chance to follow a pregnant lady through her journey and being able to meet the patient at her home and observe’*. There were issues with some practices having difficulty recruiting suitable patients requiring ongoing administrative support *‘We were assigned to a patient who had already delivered. It was a little disappointing not being able to follow one patient all the way through the pregnancy and birth of the child.’*

There remained a tension with competing pressures in this busy year, with some students prioritising other learning *‘The proportion of time designated to this compared to the amount of time I had for a medical specialty such as orthopaedics was completely disproportionate’*. Others observed their colleagues questioning the value of seeing ‘normal healthy women’ albeit with risk factors, as opposed to obstetric patients *‘The [GP] told us that you have to ask the pregnant lady about her partner... there was a*

medical student there who just completely didn't understand... there's such a big gap, she just kept saying to him 'but it's not going to change the management' reflecting a need to balance technical rationality (15) with more individualised humanistic care.

Health promotion review

The HP review, with associated seminars and assessed presentation, began with mixed evaluation. It was seen as ambitious by some GP teachers who were unsure about what topics would be acceptable and how to assess student presentations, with students unsure of what was expected and spending too long getting started. Once more established and supported with suggestions for topics, with assessment guidelines and exemplars, GP teachers became more confident and evaluation improved. There remained a minority of students who did not see the relevance of learning how health is promoted in the community *'I'm sorry to say that I gained very little from the practice placement other than a vague appreciation of some of the health economics that drives and determines the health promotion activities of a GP surgery'*, or objected to contributing to practice-led initiatives *'Health promotion felt a bit pointless, but was obviously interesting to the practice. I personally don't feel I benefitted from it at all and felt like I was doing unpaid work for the practice'*. It is a busy, high stakes year, and students were concerned about being assessed through time-consuming essays and presentations with the competing pressures of end-of-year examinations *'I feel that there are a lot of assignments during rotation 2 which puts a lot of pressure on us.'*

During the academic year 2015-16 however, most students managed good or very good projects, looking in-depth at a local intervention, or developing and piloting practice protocols or accessible patient information, and some students moving towards audit and quality improvement, achieving prizes and presenting their work at conferences. The topics chosen by students and their practices are illustrated in figure 3.

Global health

The best evaluated HP component for 4th year students was the global health component, involving a symposium, self-selected workshops on specific topics, and an essay. This was serendipitously timed to coincide with elective preparations. Global health is gaining importance in medical curricula as part of a national drive to 'internationalise' higher education (16).

Workshop facilitators came from non-government organisations, charitable organisations as well as clinicians active in the global health arena. Students valued its relevance to electives *'The climate change and sustainability workshop was excellent - it inspired me to look into incorporating this into my elective'*; and demonstrated insights into concepts such as healthcare systems, access to healthcare, health inequalities and the social determinants of health *'I had greater insight into gaining skills that can be applied in all environments, thinking about healthcare outside the NHS'*. Students valued topics with relevance to daily clinical care *'... really useful to have the FGM teaching, as we will likely meet patients who have or are scared or in favour of having this done. It's good to know the law and what we are expected to do.'* The opportunity to self-select and research a relevant topic was appreciated *'It has provided me with an opportunity to research an element of global health that is of interest to me'*.

The global health essays were generally of a high quality, with only a very few failing to reach a pass mark, relating to either poor academic scholarship or wider student issues. Student feedback was positive suggesting more than 2000 words would have been preferred *'I found the global health essay much more interesting and useful [than the elective portfolio] and would have liked to have spent more time on it and*

have more words to write about it'. Feedback from markers indicated they too learnt from these essays suggesting some go forward for publication or prizes.

Strategic learning remained an issue for assessment driven students '*The seminars, although interesting, were pretty specific and only useful if writing about those specific topics e.g. the current migrant crisis. Otherwise, not very helpful for the essay.*' Others found the open brief and requirement for self-direction challenging '*The two global health days provided no constructive guidance on what was expected for the essay. I feel I learnt about global health from my own, independent, study not from the two global health days*'. See separate publication (17) for further analysis.

Final year activities

The final year is divided into three rotations (GP, surgery and medicine) where students are embedded as apprentice junior doctors.

Social prescribing

The social prescribing lecture given at the start of the year was well-evaluated by those that attended, however current assessment strategies remain a challenge to student engagement '*I think generally people see it coming up in their lecture timetable or whatever and think "well if that MCQ comes up... I could probably make an educated guess on... I'm just not going to go"'*

Obesity case study

All students were required, with sign-up, to attend a lecture and role play on behavioural change approaches to obesity and to write up a formative 500 word reflective essay on a consultation with an obese patient. Its evaluation and the associated action research project have been published separately (18).

Community case studies

All students were required to follow three complex patients in the community, visiting them at home, exploring coping, support and the services that they use, and writing three further 500 word formative case studies. Analysis of these studies demonstrated insights into formal and informal care; the impacts of ill health on social participation, families and relationships; notions of well-being and self-efficacy; and how effective community care can support independence and reduce the risks of unplanned admission *‘...he had presented 235 times in the last 6 months!... this case highlights how social isolation can dramatically complicate a given medical condition.’*

Despite these assessments not contributing to their grade, student engagement remained high: no student failed to submit, and analysis revealed impressively high-quality reflective content, with less negative feedback about workload than was associated with the summative submissions in year 4.

The GP tutor perspective

GP tutors expressed concern for how assessment-driven students were, and how these pressures can drive strategic learning and devalue ‘soft’ learning *‘I think it is just a very soft module, it’s not attached to an actually physically observable skill... I feel there is a risk of reducing the importance of such an important skill...’*; however they supported ongoing inclusion of this curriculum *‘I think it’s perfectly alright to have a soft module... It’s not about training for exams, it’s a vocation, it’s what you are going to be doing for the rest of your life’*. They identified with students that felt driven by assessment pressures *‘...when I was a medical student exams meant everything to me, if you don’t pass the exam, you are not going to have a career.’* As tutors they valued the satisfaction of teaching, the fresh perspective that students brought to their practice, and

how they themselves learnt from students *‘I think more than anything, we all learn from the students... we were doing a seminar on obesity earlier, 10 of us together, all GPs, we thought we knew a lot, but the student today went to the seminar... there was a lot to learn from that.’*

Strengths and limitations

The authors defend case study as a methodology for understanding complexity in a particular context (19), and dispute the promise of enhanced transferability from multi-centre qualitative studies. We argue that lived experiences and behaviour need a context to be understood, and therefore invite readers into the ‘real world’ insights this methodology can provide, and then to apply knowledge of their own context to draw personally relevant conclusions.

This curriculum has involved over 4000 students, and many clinical teachers and facilitators over three years. The research has been based on multiple data sources including assignments, evaluations and focus groups and has been a collaborative research effort involving course organisers, academic and clinical colleagues, as well as undergraduate and postgraduate research students.

As the research was internally conducted, bias has been mitigated as far as possible through reflexive approaches and the collection and analysis of data by co-researchers not directly involved in the programme.

Conclusions

This implementation has covered a broad range of HP topics and pedagogies. Technical challenges have been highlighted including how to adequately prepare and support clinical teachers; the need to establish relevance and importance to strategic learners; the need for experiential learning in clinical environments to support classroom-based

activities; the tensions between technical rationality and humanistic care; and the need to rebalance competing aspects of the curriculum. A summary of findings, including action research elements, is presented in figure 4.

In order to draw generalizable educational insights from this data, we must consider the nature of HP knowledge which may be divided into two broad interlinked and overlapping categories:

1. a skills based domain, which includes clinical applications such as smoking cessation , behaviour change, exercise promotion and addressing obesity;
2. a social sciences domain, which includes topics such as public health, global health, healthcare systems and policy.

Our experiences in the first domain support a cognitive apprenticeship model of skills acquisition (20) that includes experiential learning in clinical contexts, enabling students to see relevance to their future practice, thus developing both role legitimacy and competency. Our work on obesity demonstrated the importance of teacher development to promote role modelling and normalisation of best practice (18) and we have shown that student presentations or assignments, marked or discussed by clinical teachers, can be an effective adjunct to formal teacher development. Experiential learning necessarily involves heterogeneous student experiences and therefore group seminars or other social learning opportunities are helpful to discuss and critique different practices.

Our experiences in the second social sciences domain, in particular global and public health, involved students adopting a more evaluative, critical stance; analysing and theorising from the literature, case studies or direct observations, supported through workshops and tutorials. This type of learning necessarily requires assessment modalities that support depth over breadth of learning. This may involve a paradigm

shift for some students, and indeed institutions, who may be accustomed to a defined and testable knowledge base.

Many students are internally motivated and will engage with learning according to interest, however a high assessment load drives a significant part of the student body towards tactical learning strategies. Allowing students to study a choice of topics in depth, rather than learn a standardised set of facts, is challenging in a positivist-oriented assessment culture. The implications of a national Medical Licensing Assessment (21) consisting solely of multiple choice and structured clinical examination must be considered. Alternative assessment modalities such as essay, case study or presentation can be challenging when summatively assessed due to assessor and student workload, as well as issues to do with standardisation and reliability. Our experiences support maintaining these assessment modalities as compulsory but formative or low-weighting assignments *for* learning, not *of* learning: potentially portfolio submissions, with strategies to acknowledge excellence, and progression implications only arising from failure to complete to an adequate standard. HP and public health have a complex evidence base, based on human experience, and, rather like the study of education itself, do not lend themselves to positivistic assessments. There is a need to rebalance the assessment load of our students to re-invigorate and re-prioritise this type of learning.

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Figure 1: Drivers and intended outcomes

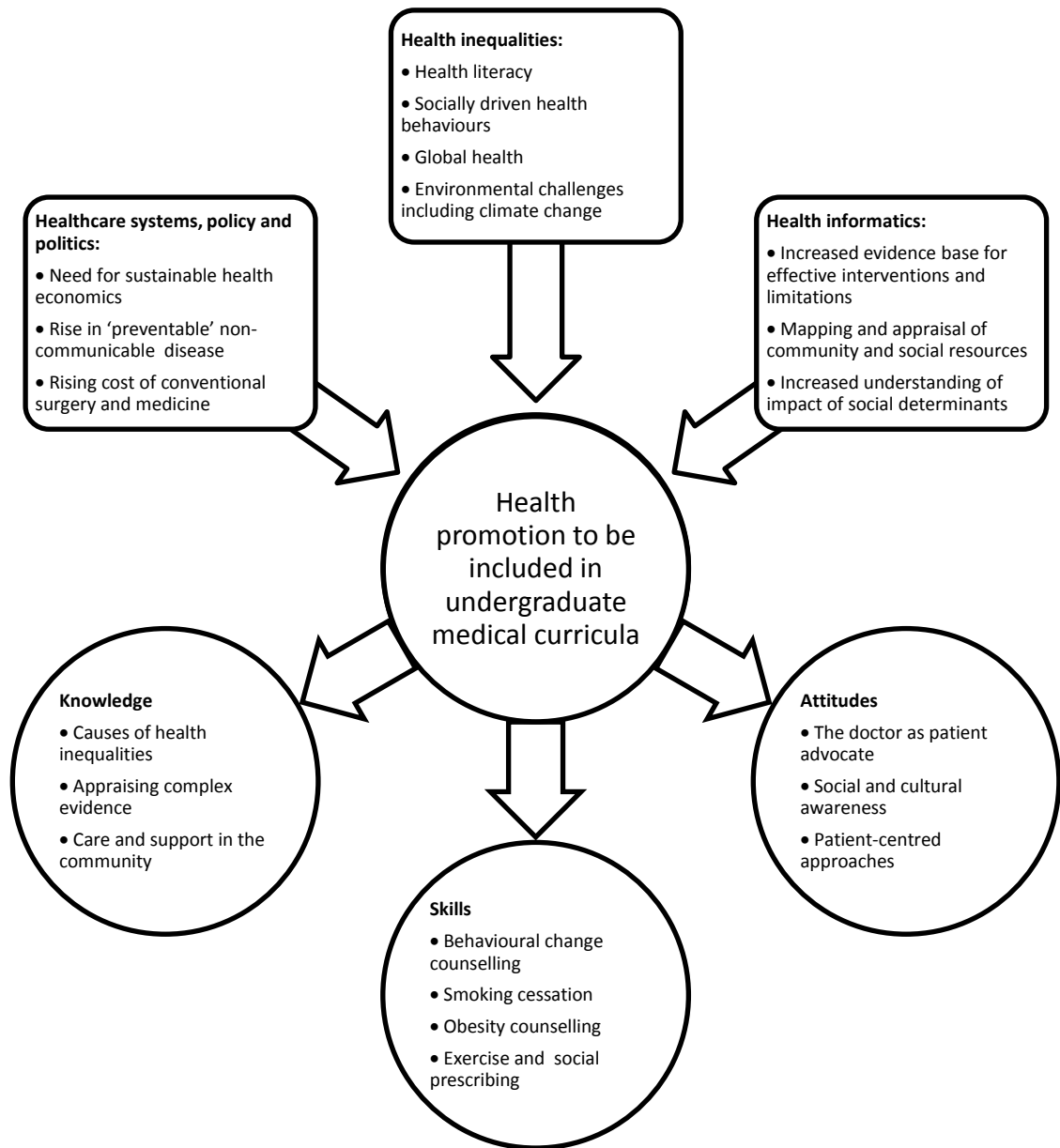


Figure 2. Summary of data generation and analysis strategy

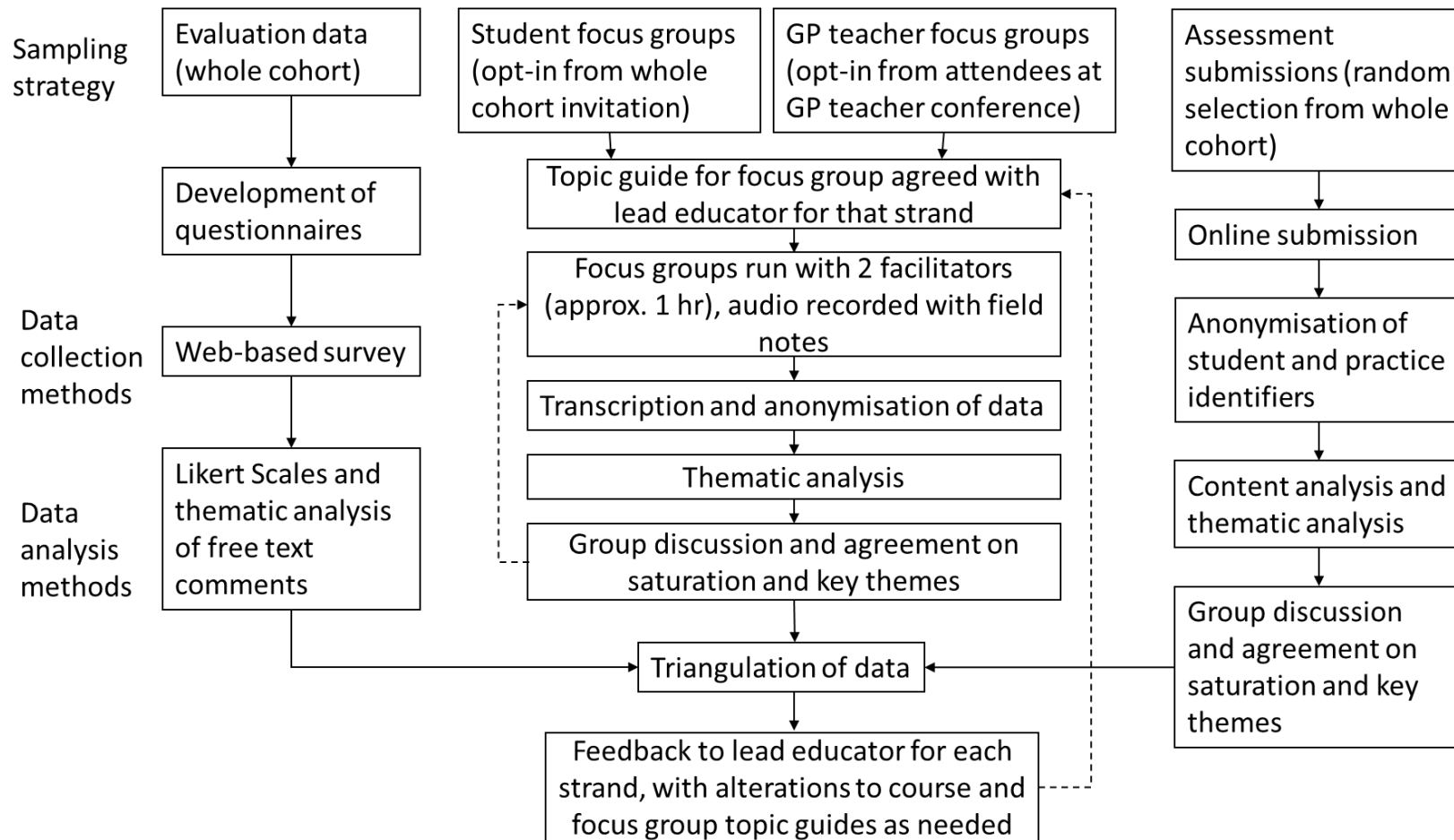


Figure 3. A frequency-weighted word cloud of health promotion review presentation topics



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Figure 4. Main action research elements and evaluation findings

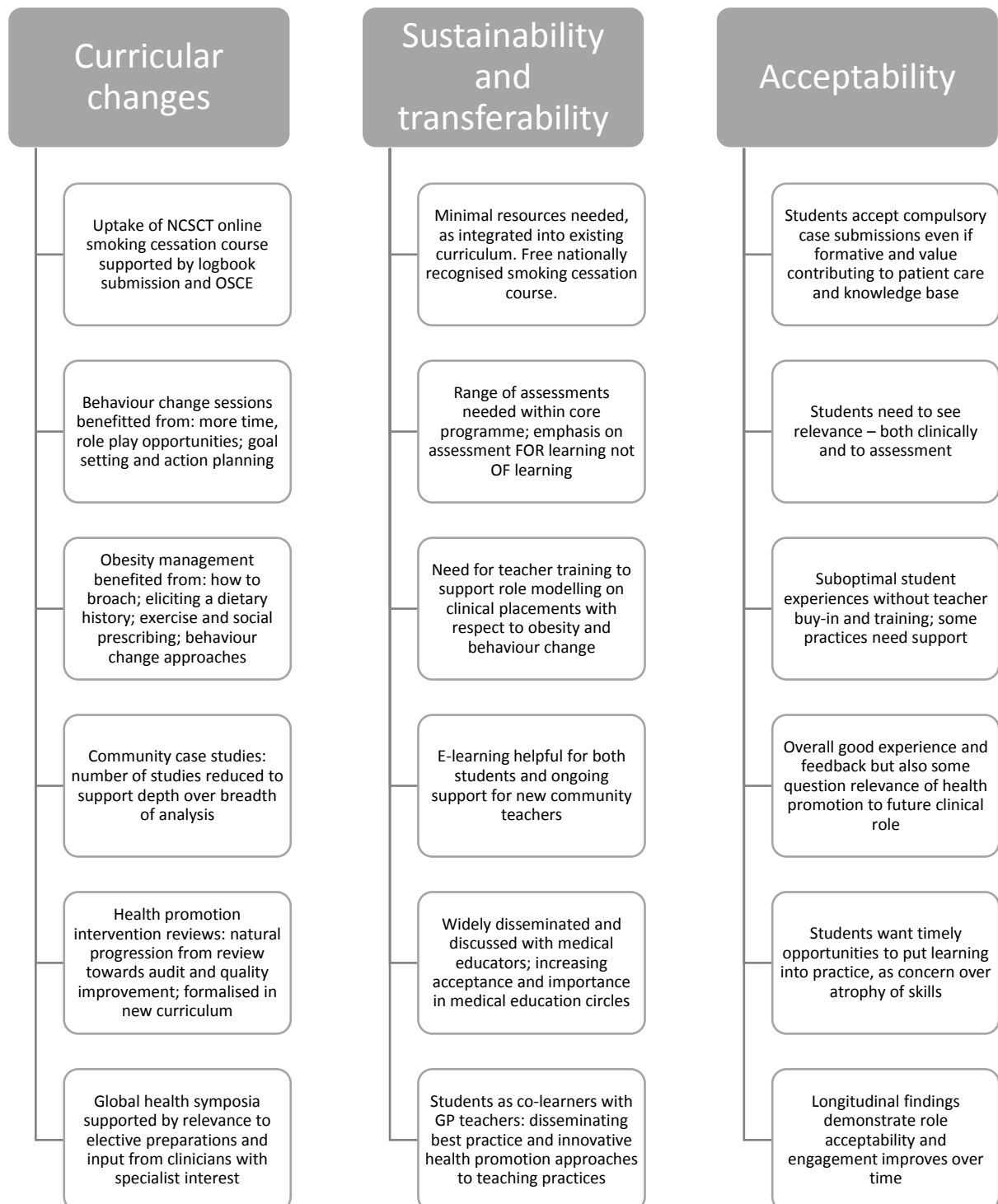


Table 1. Summary of health promotion curriculum content

<i>Year of teaching</i>	<i>Topics/content</i>	<i>Teaching approaches</i>	<i>Assessment modalities</i>	<i>Hurdle/progress implications</i>	<i>Comment</i>	<i>Research notes</i>
<i>3rd year</i>	1) Global burden of tobacco, alcohol and obesity	Lectures	Single best answers (SBAs)	Small part of summative end-of-year written paper		Course evaluation
	2) Behaviour change and motivational interviewing in clinical contexts	Lecture followed by small group workshops and roleplay scenarios	OSCEs	Attendance sign-up		Course evaluation
	3) Smoking cessation	Online nationally recognised NCSCT course	Online test	Non-compulsory certificate in logbook; to become compulsory this year	Completion rate has increased from 28% (2012) to 62% (2015);	Three focus groups
	4) Patient centred approaches to clinical consultations	GP tutorials; simulated GP surgeries at RCGP	Log book / mini-CEX / feedback	Must be satisfactory, progression implications		Course evaluation, four focus groups
<i>4th year</i>	1) Longitudinal pregnancy/post- natal study	Students allocated a pregnant woman via GP; two home visits and attending appointments; associated seminars	Presentation with specific focus on a relevant health behaviour or social determinant of health	Must pass this element (50% pass mark) to progress, and contributes 2.5% to end-of-year mark	Most students highly engaged; some commended presentations	Course evaluation; two student and one tutor focus group
	2) Health promotion review of local intervention or resource	A range of options and suggestions, but focus set by mutual agreement – to benefit the GP practice	Presentation demonstrating ability to evaluate complex evidence within local contexts	Must pass this element (50% pass mark) to progress, and contributes 2.5% to end-of-year mark	Mostly highly engaged; prizes available; some students invited to submit conference posters/presentations;	Course evaluation; two student and one tutor focus group; analysis of assignments
	3) Global health	Symposia and selection of workshops	2000 word global essay health on topic of choice	Final SSC prior to Foundation application; minimum number of SSCs to graduate	Mostly highly engaged; prizes available; some students invited to submit essays for publication	Analysis of assignments; student evaluation
<i>5th year (final year)</i>	1) Social prescribing	Lecture; practice-based opportunities during clinical placements	Some SBAs in finals question bank	Small part of written finals		Course evaluation; two focus groups
	2) Discussing obesity in a GP setting	Lecture, role-play, e-learning and practice-based opportunities during clinical placements	Online submission of 500 word reflective case study; discussed at GP tutorial	Compulsory hurdle assessment; formative	High level of engagement despite formative element; no failures to submit in three years	Analysis of assignments; course feedback; GP tutor survey
	3) Community health case studies	Home visits to three complex patients; exploration of associated community services	Online submission of 3x 500 word case studies; discussed at GP tutorials	Compulsory hurdle assessment; formative	High level of engagement despite formative element; no failures to submit in three years	Analysis of assignments; course evaluation; GP tutor feedback